Claims

[1] A method for constituting a layered cell, which is for constituting a cell in an OFDMA (Orthogonal Frequency Division Multiple Access) mobile communication system, the method comprising:
(a) dividing L carriers having orthogonality into M sub-channels;
(b) dividing the carriers into N groups each having the M sub-channels;
(c) grouping the N groups by an arbitrary integer into K classes; and
(d) constituting a plurality of layered cells corresponding to the K classes.

[2] A method for constituting a layered cell, which is for constituting a cell in an OFDMA mobile communication system, the method comprising:
(a) dividing L carriers having orthogonality into M sub-channels;
(b) dividing the carriers into N groups each having the M sub-channels;
(c) grouping the N groups by an arbitrary integer into K classes; and
(d) constituting a plurality of layered cells corresponding to the K classes.

[3] The method as claimed in claim 1 or 2, wherein in the step (c), the respective K classes include the same or a different number of groups.

[4] The method as claimed in claim 3, wherein the step (c) comprises: sequentially allocating the groups to each of the K classes, and allocating the (nK+k)-th group to the k-th class, when the respective K classes include the same number of groups.

[5] The method as claimed in claim 3, wherein the step (c) comprises: arbitrarily allocating the respective N groups to each of the classes, when the respective K classes include a different number of groups.

[6] The method as claimed in claim 1 or 2, wherein the plural layered cells of the step (d) includes sector layers comprising a plurality of sectors classified by wireless areas, and a cell layer comprising a single cell corresponding to an overall cell area.

[7] The method as claimed in claim 6, wherein the step (d) comprises:
(d-1) allocating a capacity by sectors classified by wireless areas to map the classes to capacity;
(d-2) generating the classes by as many as the number of sectors; and
(d-3) allocating each class by sectors to constitute the sectors.

[8] The method as claimed in claim 6, wherein the step (d) comprises:
(d-1) grouping the classes in a number of the sectors plus one;

(d-2) allocating each class to a sector area; and

(d-3) allocating the remaining class to a cell including the cell area.

[9] The method as claimed in claim 6, wherein the step (d) comprises:

(d-1) grouping the N groups into two classes;

(d-2) allocating one class to the sector layers to allocate wireless resources for the classes equal in number to the sectors; and

(d-3) allocating the other class to the cell layer.

[10] The method as claimed in claim 9, wherein the step (d-2) comprises: using a channel encoding technique and a forward error compensation method for data transmission when a collision occurs at a boundary of the sectors.

[11] The method as claimed in claim 9, wherein the step (d-3) comprises: allocating wireless resources equally throughout the area of the cell layer to constitute a layered cell structure.

[12] The method as claimed in claim 6, wherein the sector layers allow a use of wireless resources for a user having a low movement speed, the cell layer allowing a use of wireless resources for a user having a high movement speed.

[13] The method as claimed in claim 6, wherein the sector layers allow a use of wireless resources for a service having a low priority, the cell layer allowing a use of wireless resources for a service having a high priority.

[14] The method as claimed in claim 6, wherein the sector layers allocate resources of the cell layer to a user requiring a high data rate in the vicinity of a sector boundary to allow a selection of AMC (Adaptive Modulation Coding) for high-speed data transmission.